Meeting of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction

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Exploration of approaches by which States Parties, individually or collectively, might contribute to the strengthening of international response capabilities for infectious disease outbreaks, whether natural or deliberate in origin

The United Kingdom public health rapid support team concept

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I. Introduction

1. In a UK Working Paper to the 2015 Meeting of Experts,[1] we noted that one of the key lessons from the West African Ebola virus disease (EVD outbreak was the need for rapid response teams. We also reported that the United Kingdom was developing plans to establish a more robust national rapid response workforce for public health emergencies and intended to establish a new group of six to ten expert staff. This would consist mainly of epidemiologists, infection control specialists and infection control doctors – who would be on permanent standby, ready to deploy to help countries respond to disease outbreaks.

2. A UK Public Health Rapid Support Team (UK-PHRST) became operational in November 2016 and has deployed on several occasions since then. The UK has made £20 million available from its development assistance budget to fund the team over five years. Public Health England and the London School of Hygiene and Tropical Medicine, with the University of Oxford and King's College London serving as academic partners, jointly run the team. This short note summarises the concept, deployments thus far and highlights some lessons learned. It concludes with a recommendation for possible inclusion in the 2018 Meeting of States Parties' report.

[1] BWC/MSP/2015/MX/WP2, 6 July 2015.

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II. Public Health Rapid Support Team

3. UK-PHRST consists of public health experts, scientists and academics, and is on stand-by to tackle outbreaks of infectious disease anywhere in the world within 48 hours. The team is on call to respond to urgent requests and fly in to help tackle disease outbreaks at source.[2] The ability to deploy emergency support to investigate and respond to disease outbreaks in low and middle income countries within 48 hours will save lives and prevent further outbreaks. Speed is key in tackling infectious disease as outbreaks can spread rapidly, including across borders. Halting diseases at source is the most effective way to protect people in the affected country, regionally and globally. UK-PHRST focuses on three objectives:

- Saving lives and outbreak response;
- Innovative research to generate evidence on best practices for outbreak control; and,
- Capacity building for outbreak response in low and middle-income countries eligible for UK Government Support.

UK-PHRST works to address the emergencies that may happen today, but also to understand how to make our future responses more effective. We want to build capacity so responses can come more from within the affected countries or region. Ultimately, of course, our goal is to strengthen the health systems so that outbreaks never occur at all.[3]

4. It is vital that we help strengthen vulnerable countries to detect and respond quickly to disease outbreaks. This means the world will be better prepared to prevent future epidemics. Informed by surveillance data, the UK-PHRST deploys on behalf of UK government in response to requests from low- and middle-income countries, as well as through the WHO and the Global Outbreak and Response Network (GOARN). The criteria for deployment are: an invitation by international bodies (WHO GOARN, EU, European Centre for Disease Prevention and Control; a bilateral request from an affected country; and in support of UK-MED and Emergency Medical Teams[4] responding to outbreaks of emerging diseases and complex humanitarian emergencies.[5]

5. When not responding to a disease outbreak, the team studies how best to deal with different types of outbreak. They will also create and train a group of public health reservists to make sure the UK is able to scale up its response to any disease outbreak or health emergency.

6. The team works in partnership with host countries and other international responders to control an outbreak as quickly as possible, but also to help countries to develop their own capacity for improved and rapid national response to future disease outbreaks. This involves working with counterparts in developing countries to train local response teams to identify and control disease outbreaks with minimal need for outside support. A key objective is long-term capacity building to prevent and respond to outbreaks in low and middle-income countries in West and East Africa and in Asia.

7. The multidisciplinary team has a *'One Health'* focus and includes experts in:

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[2] https://www.gov.uk/government/news/uk-team-of-health-experts-to-tackle-global-disease-outbreaks, 1 November 2016.

[3] https://www.lshtm.ac.uk/newsevents/expert-opinion/how-does-uk-public-health-rapid-support-team-investigate-and-respond

[4] https://www.uk-med.org/?page_id=1366

[5] https://www.phaa.net.au/documents/item/2218

- Tracking the progress of an outbreak (epidemiologists)
- Diagnosing the cause of an outbreak (microbiologists)
- Advising on outbreak control measures (infection prevention and control)
- Community responses to outbreaks (social scientists)
- Developing the best clinical response measures (clinical researchers).

8. Training of team personnel is a central part of the rapid response process and helps ensure effectiveness in the field as well as the safety of the team. It includes core pre-deployment training; specialist training on issues such as emergency preparedness and response and capacity building in the UK and overseas, such as on sustainability where 'train the trainer' efforts play an important part.

9. Since April 2017, the UK PHRST has deployed members on seven separate occasions. These were to Ethiopia (outbreak of Acute Watery Diarrhoea), Nigeria (Meningitis outbreak), Sierra Leone (cholera risk), Madagascar (plague outbreak), Bangladesh (Diptheria outbreak), Nigeria (Lassa fever outbreak) and to the Democratic Republic of Congo (DRC) to support the outbreak of EVD. In the Nigerian Lassa fever outbreak, the UK-PHRST team deployment included an expert in patient management, two epidemiologists and a logistician. The team provided technical and analytical support for the public health response to control the outbreak, and assisted important research on Lassa fever that can provide insight for controlling the disease in the future. The team worked alongside the Nigerian Centre for Disease Control, the World Health Organisation, and other experts in outbreak control to support the Nigerian government's response.[6] In the DRC case, the three team members deployed included two epidemiologists) and a data scientist. The team was expected to remain in the DRC for around six weeks, to help track the spread of the outbreak, and provide support in establishing robust data systems that will help align crucial information gathering.[7]

III. Lesson learned to date

10. During the plague outbreak in Madagascar, UK-PHRST saw the importance of working with various local and international partners on research priorities in the context of an epidemic. In this case it was able to establish a study of the pulmonary form of plague to better distinguish that disease from other respiratory diseases that initially look like plague but turn out to be other more common and usually less serious diseases. The results of this study will help to identify more rapidly the people who have plague and provide the medical care that they need, thereby reducing onward transmission.

11. UK-PHRST needs to build bridges and collaborations across the vast biomedical and public health expertise within the UK in government, academia and the private sector. It thus engages in numerous training and capacity building endeavours, which includes work in Sierra Leone, Ethiopia, and elsewhere. For example, it is working with the Sierra Leone College of Medicine and Allied Health Sciences to support a new Masters of Public Health course, which encompasses, amongst many other things, training in epidemiology

[6] https://www.wired-gov.net/wg/news.nsf/articles/UK+Public+Health+Rapid+Support+Team+deploys+to+Nigeria+27022018161000?open

[7] https://www.gov.uk/government/news/ebola-outbreak-uk-public-health-rapid-support-team-deploys-to-drc

and biostatistics—key knowledge areas for effective outbreak control. The goal is to create a generation of local experts that will be able to prevent and control outbreaks with minimal need for outside support.

12. Some specific issues on operational effectiveness include:

(a) The need to ensure that visas carry the necessary access authorities beyond the standard business or tourist visas. New visa requirements obliged a PHRST team to adapt the work plan to the visa requirements, and required staff in country to adapt to the new situation, and ensure that the problems encountered were addressed through the right channels.

(b) There were recurrent problems with team laptops, particularly if there were IT issues that needed IT support out of hours, or for anything that required administrator rights (e.g. downloading and installing of particular software used in the response, configuring computers to log on to secure networks of other organisations etc.). Specific field deployment laptops have now been provided. In addition, specific IT training to solve Public Health England specific issues on the field has been provided to the core PHRST deployable team.

(c) Coordination and roles in country: The relatively large number of people deployed in one case through GOARN and other mechanisms represented a coordination challenge for both the WHO Country Office and the individuals themselves. While specific Terms of Reference are not expected (and not often advisable) in the early phase of an epidemic, the high volume of deployed persons may make skill matching of individuals more difficult. Thus more clarity on activities to be undertaken, and on the roles and responsibilities of all individuals deployed may help avoid duplication of work.

(d) A need for streamlining of general pre-deployment, deployment and post-deployment processes was identified and has subsequently been discussed with GOARN.

IV. Recommendation

13. The following might be a recommendation that the Meeting of States Parties include in their report:

> *'Those States Parties in a position to so should establish small public health rapid response teams to help combat an outbreak of infectious disease and consider putting them on the new interactive Assistance and Cooperation Database under the Emergency Response and Assistance category. Such response teams could serve as a resource that can be invited by other states to deploy in the event of a public health emergency as well as a resource to assist capacity building efforts in this area.'*